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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,104	10/19/2001	Chun-Keng Hsu	67,200-531	8828

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EXAMINER

CHIN, PAUL T

ART UNIT	PAPER NUMBER
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3652

DATE MAILED: 12/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/040,104

Applicant(s)

HSU ET AL.

Examiner

PAUL T. CHIN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because the signatures, the dates, and the residences of the inventors are unreadable.

Drawings

2. The drawings are objected to because it appears that the “prior art” labeled in the figures 5A-5C should be deleted because the applicant describes the above figures as the present invention in the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference number “62” (page 14, lines 10-11) mentioned in the description. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because the reference number “54” (Fig. 3) is not described in the specification. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: it appears that on page 4, line 15, the "Figure 4" should be changed to – Figure 1B –, and on page 5, line 5, the word "quarts" should be changed to – quartz --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 is vague and indefinite because it is not clearly understood the claimed language of "*said body is fabricated of a metal or a ceramic that has the rigidity at least that of aluminum.*" The rigidities of the "metal" and "aluminum" could be very similar. However, the rigidities of the "ceramic" and "aluminum" are totally different.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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9. Claims 1,4-7, and 14-19, are rejected under 35 U.S.C. 102(e) as being anticipated by **Park et al. [U.S. Patent Application Publication 2001/0051088]**.

Park et al. ['088] discloses a wafer pickup system comprising a wafer blade (32) (see Figs. 5,6, and 8) having a blade body with an elongated shape which has a top surface, and a bottom surface (34); the wafer blade having a fork shape in the distal end (see Fig. 4) and also having a substantially rectangular shape in the base area (see Fig. 4); and a tactile sensor or a strain sensor (43,63), which is a thin film (Re claim 7), mounted on the bottom surface (34) of the blade body.

Re claim 6, **Park et al.**'s wafer pickup system ['088] discloses that the blade body is being made of metal (page 1, second column, the third paragraph) or a ceramic (page 1, second column, the fourth paragraph).

Re claims 14 and 18, **Park et al.**'s wafer pickup system ['088] further shows an alarm system or device (page 2, the second column, lines 1-6) receiving signals from the sensors to a controller (46).

Re claims 15 and 16, **Park et al.**'s wafer pickup system ['088] shows the wafer blade having a fork shape in the distal end (see Fig. 4) and also having a substantially rectangular shape in the base area (see Fig. 4).

Re claim 17, **Park et al.**'s wafer pickup system ['088] shows the alarm system receiving an electric current or signals produced by the sensors (page 2, the first column, the last paragraph) when a strain is detected.

Re claim 19, **Park et al.**'s wafer pickup system ['088] shows that the alarm system could be a visual system such as a warning light (page 2, the second column, lines 1-6).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2,3,8-13, and 20, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Park et al. [US 2001/0051088]** in view of **Piper [5,803,797]**.

Park et al.'s wafer pickup system, as presented in section 9 above, does not show the sensors being made of *piezoelectric sensors*. However, **Piper [5,803,797]** shows *piezoelectric sensors* (182) (see Col 13, lines 51-64) (Fig. 18) to detect the touching of a wafer.

Re claims 2 and 20, it would have been obvious to provide *piezoelectric sensors* (instead of using tactile sensors) on the Park et al.'s wafer pickup system as taught by Piper [5,803,797] to adequately and instantly detect the upper surface of a wafer when contacted.

Re claim 3, it also would have been obvious to provide *piezoelectric sensors* capable of sensing at least 1 micro-meter strain on the Park et al.'s wafer pickup system to provide more sensitivity so that the modified system would be capable of detecting the instant contact with the upper surface of the wafer located below.

Re claims 8-10, Park et al. ['088] discloses a wafer pickup system comprising a wafer blade (32) (see Figs. 5,6, and 8) having a blade body with an elongated shape which has a top surface, and a bottom surface (34); the wafer blade having a fork shape in the distal end (see Fig. 4) and also having a substantially rectangular shape in the base area (see Fig. 4); and a tactile sensor or a strain sensor (43,63), which is a thin film (Re claim 7), mounted on the bottom

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surface (34) of the blade body. However, the sensors of Park et al. ['088] are not made of *piezoelectric sensors*.

However, Piper [5,803,797] shows *piezoelectric sensors* (182) (see Col 13, lines 51-64) (Fig. 18) having a thin film and being capable of detecting the strain on the sensors to detect the touching of a wafer. Accordingly, it would have been obvious to provide *piezoelectric sensors* on the Park et al.'s wafer pickup system as taught by Piper [5,803,797] to adequately and instantly detect the upper surface of a wafer when contacted.

Re claims 12 and 13, it would have been obvious to *substantially or partially* cover the surface of the blade with the *piezoelectric sensors* so that the modified system would be capable of detecting the contact with the upper surface of the wafer depending upon the desired sensitivity.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Thurfjell et al. [5,044,752]** shows a wafer blade (1) having four sensors (3-6) on the upper surface of the wafer blade.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL T. CHIN whose telephone number is (703) 305-1524. The examiner can normally be reached on MON-THURS (7:30 -6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EILEEN LILLIS can be reached on (703) 308-3248. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177.



EILEEN D. LILLIS
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PTC
November 26, 2002